Tennessee Pollution Prevention Partnership Success Story

Triumph Aerostructures, LLC
1431 Vultee Blvd
Nashville, TN 37217
615-361-2000
www.triumphgroup.com

1-800-734-3619
www.tp3.org

Conversion to Electric Plant Vehicles Improves Air Quality

The Member

Aircraft manufacturing operations have been conducted at Triumph Aerostructures' Nashville site since the early 1940's, when a predecessor company opened the plant to build bombers in support of the war effort. Today, the Nashville site builds commercial and military aircraft components, including wings, wing panels, stringers, spars, and empennages. Its customers include Airbus, Gulfstream, Cessna, and Lockheed Martin. The plant employs more than 800 people, and has a total footprint of greater than 2 million square feet under roof. The facility continually seeks opportunities to conserve resources and reduce the environmental impacts of its operations.

The Story

Many small vehicles (golf carts and small tugs) are used at the facility for transport of personnel and materials. Historically, the vehicles were powered by internal combustion engines, and used gasoline as the fuel.

In order to improve indoor air quality around the facility, and also to reduce operating expenses, the decision was made in late 2009 to reduce and consolidate the size of the vehicle fleet, and to convert the majority of the remaining vehicles from gasoline to electric. These actions would result in a significant reduction in emissions and energy (gasoline) usage at the facility. Prior to project implementation, there were 83 gasoline-powered vehicles in use.

The Success

In early 2010, 46 vehicles were removed from service without replacement. Of the remaining 37 vehicles still in use, 23 of them were replaced by electric units. This represents an overall reduction in the number of gasoline-powered units of more than 80%. The electric vehicles were placed into service in May and June 2010. For the first 12 months of implementation of the project, there was a reduction in gasoline usage of approximately 3,400 gallons, as compared to the previous 12-month period. Also, indoor air quality was greatly improved.

The Pollution Prevented

The project resulted in a reduction in hydrocarbon (VOC) emissions of approximately 1 ton per year (tpy), and a reduction in carbon monoxide (CO) emissions of approximately 30 tpy. It is estimated that there will also be a reduction in used oil and other spent automotive fluids generation of 1 to 2 drums per year. The project will also have a positive impact on stormwater runoff from the facility, due to reduced potential for spills and leaks of gasoline and automotive fluids.

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